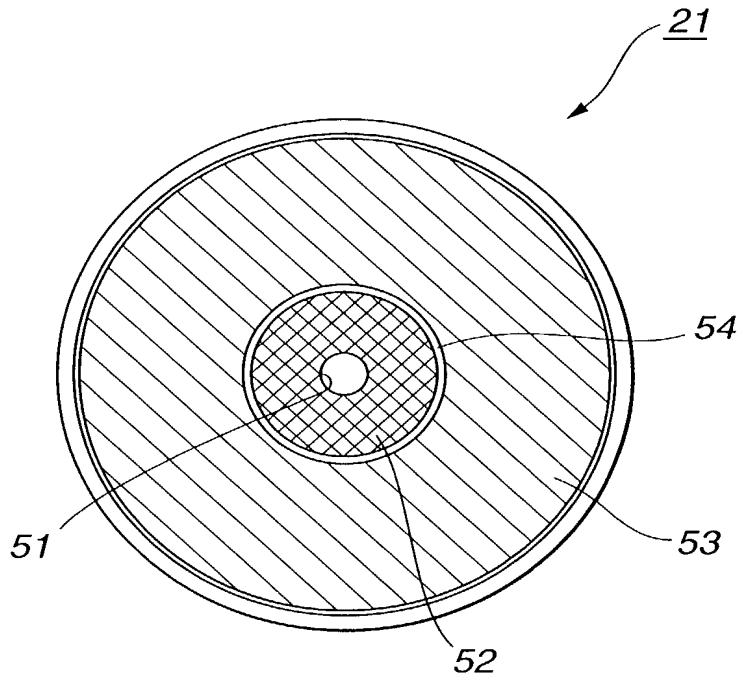

FIG.1

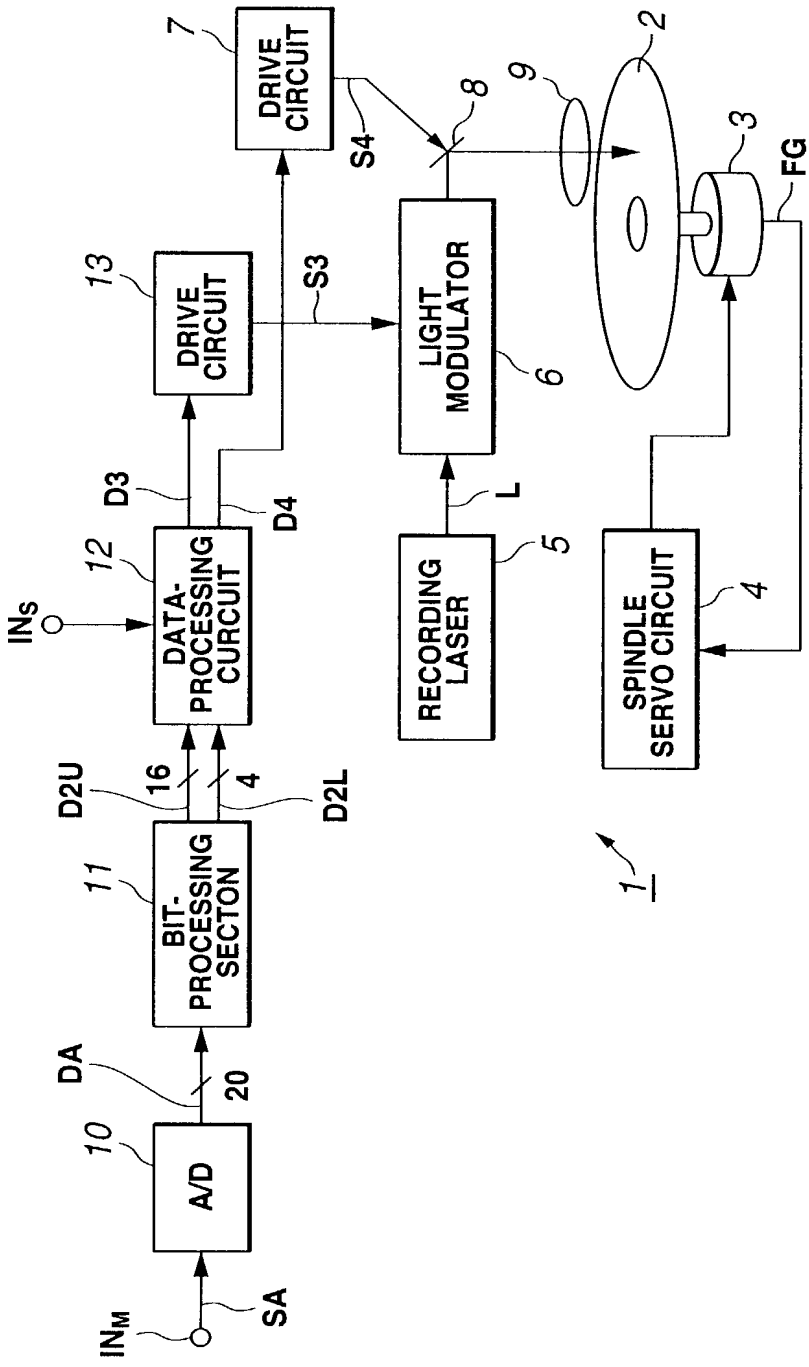
IN_M
SA
A/D
10
DA
20
BIT-PROCESSING SECTON
11
D2U
16
4
D2L
IN_S
DATA-PROCESSING CURCUIT
12
D3
D4
DRIVE CIRCUIT
13
DRIVE CIRCUIT
7
S3
S4
8
LIGHT MODULATOR
6
L
RECORDING LASER
5
9
2
3
FG
SPINDLE SERVO CIRCUIT
4
1

FIG.2

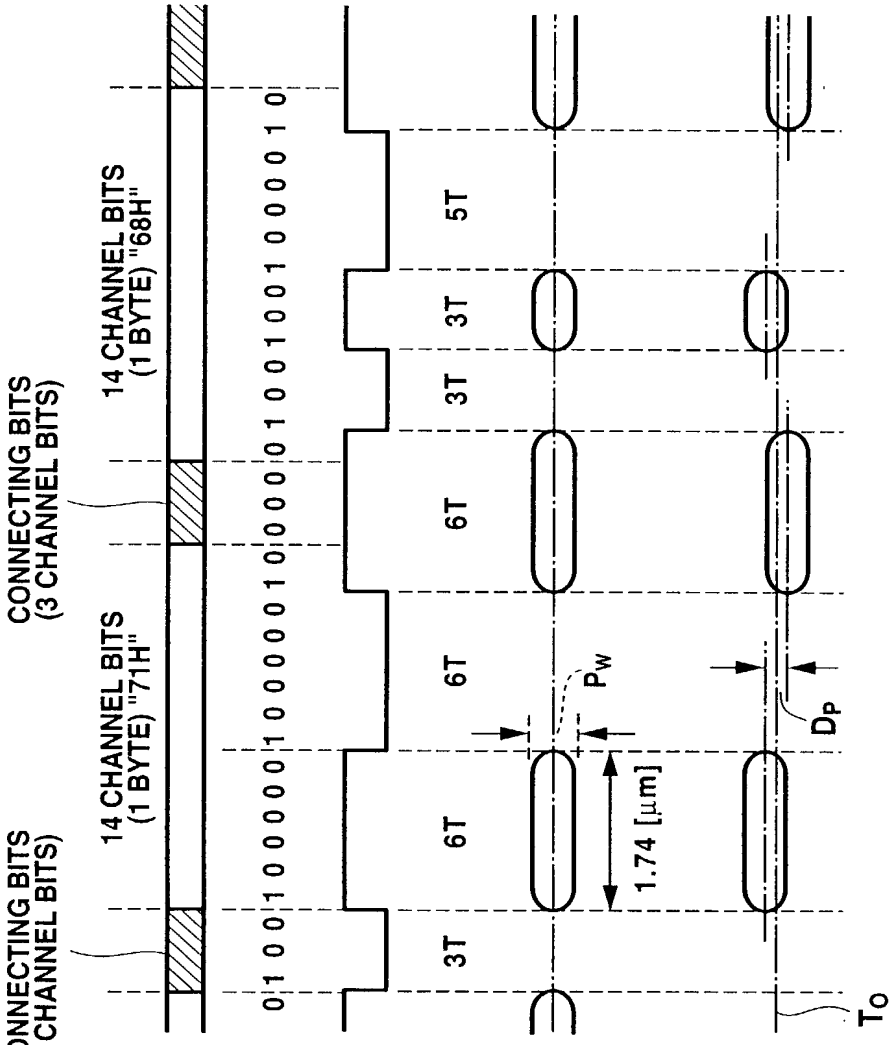

FIG.3A

FIG.3B

FIG.3C

FIG.3D

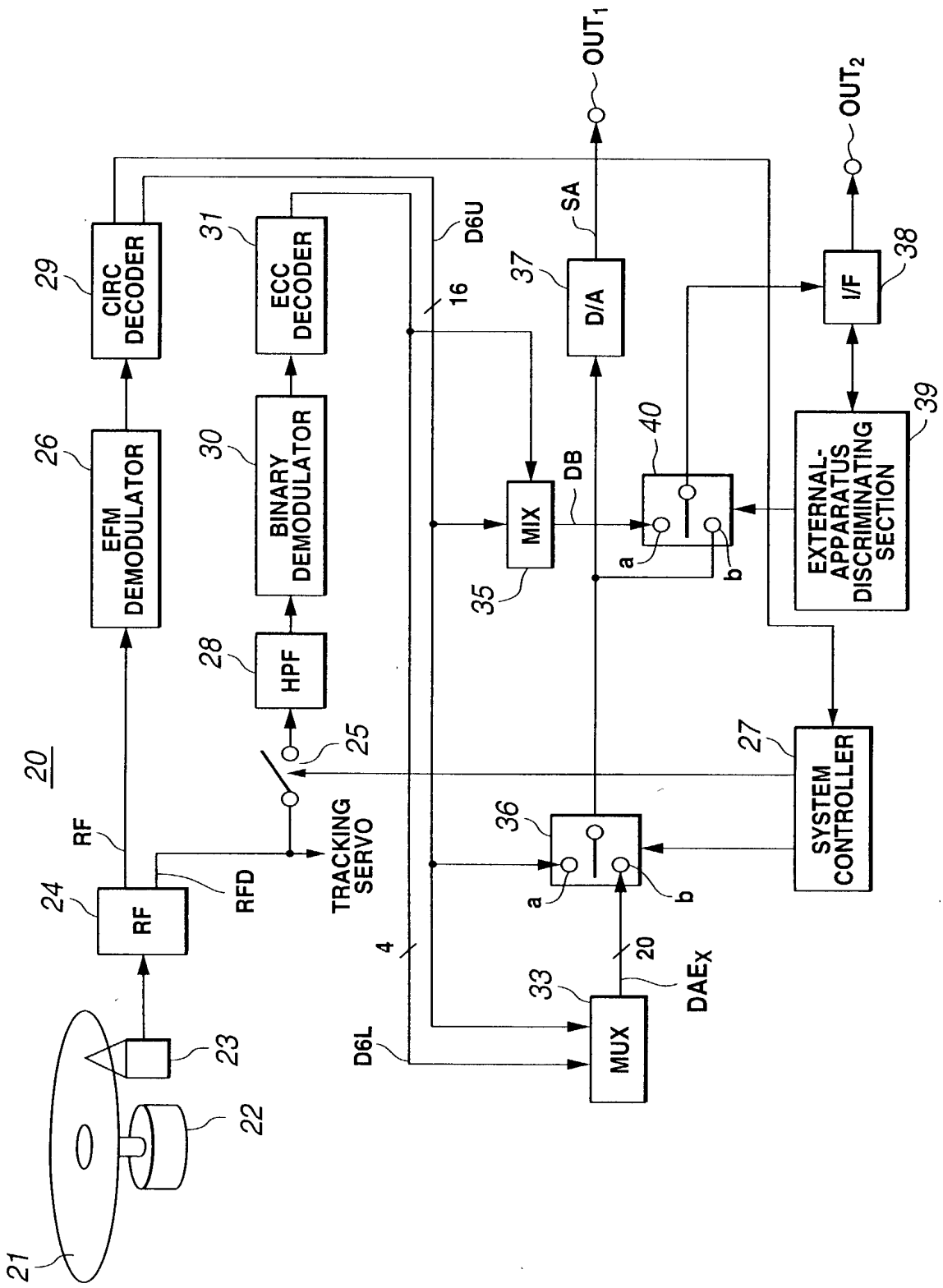
20
21
22
23
24
RF
RF
RFD
25
TRACKING SERVO
26
EFM DEMODULATOR
29
CIRC DECODER
27
SYSTEM CONTROLLER
28
HPF
30
BINARY DEMODULATOR
31
ECC DECODER
D6U
16
D6L
4
33
MUX
20
DAEX
35
MIX
DB
36
a
b
37
D/A
SA
OUT1
40
a
b
38
I/F
OUT2
39
EXTERNAL-APPARATUS DISCRIMINATING SECTION

FIG.4

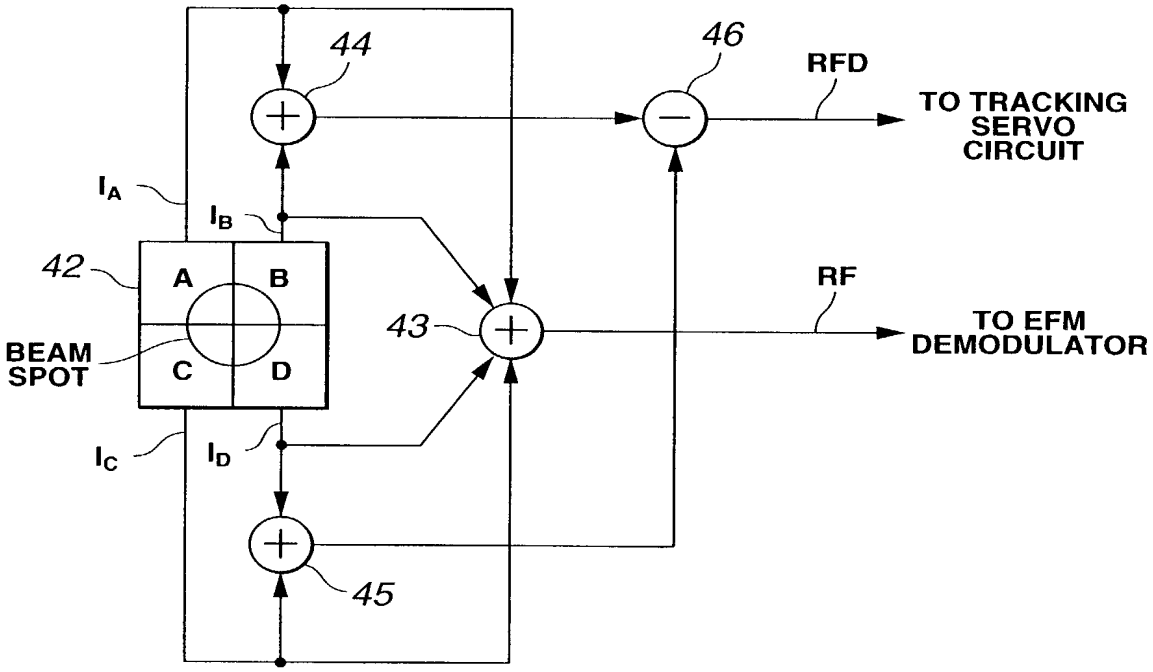
44
46
RFD
TO TRACKING SERVO CIRCUIT
I_A
I_B
42
A
B
BEAM SPOT
C
D
43
RF
TO EFM DEMODULATOR
I_C
I_D
45

FIG.5

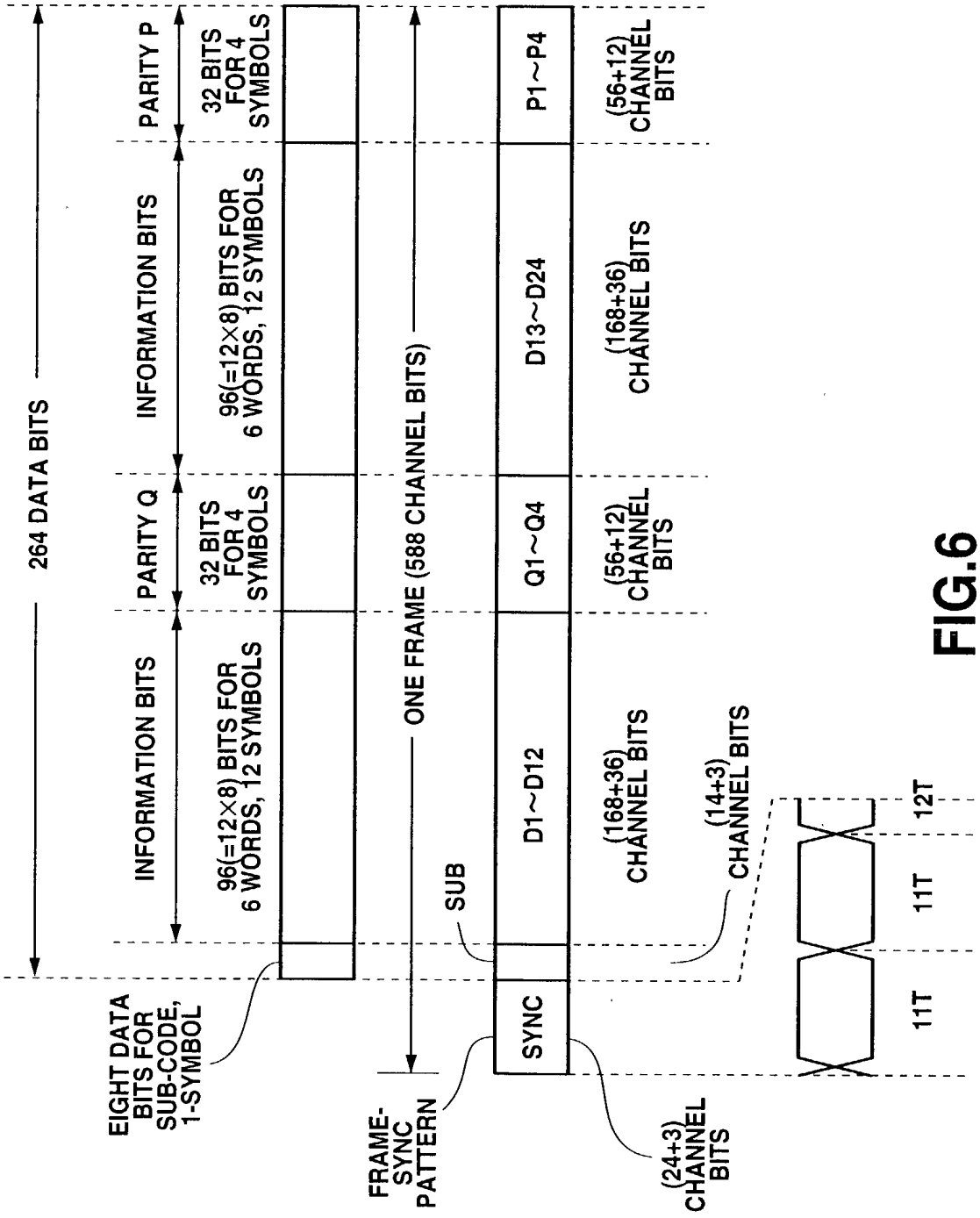
264 DATA BITS
INFORMATION BITS
96(=12×8) BITS FOR 6 WORDS, 12 SYMBOLS
PARITY Q
32 BITS FOR 4 SYMBOLS
INFORMATION BITS
96(=12×8) BITS FOR 6 WORDS, 12 SYMBOLS
PARITY P
32 BITS FOR 4 SYMBOLS
EIGHT DATA BITS FOR SUB-CODE, 1-SYMBOL
ONE FRAME (588 CHANNEL BITS)
FRAME-SYNC PATTERN
SYNC
SUB
D1~D12
Q1~Q4
D13~D24
P1~P4
(24+3) CHANNEL BITS
(168+36) CHANNEL BITS
(56+12) CHANNEL BITS
(168+36) CHANNEL BITS
(56+12) CHANNEL BITS
(14+3) CHANNEL BITS
11T
11T
12T

FIG.6

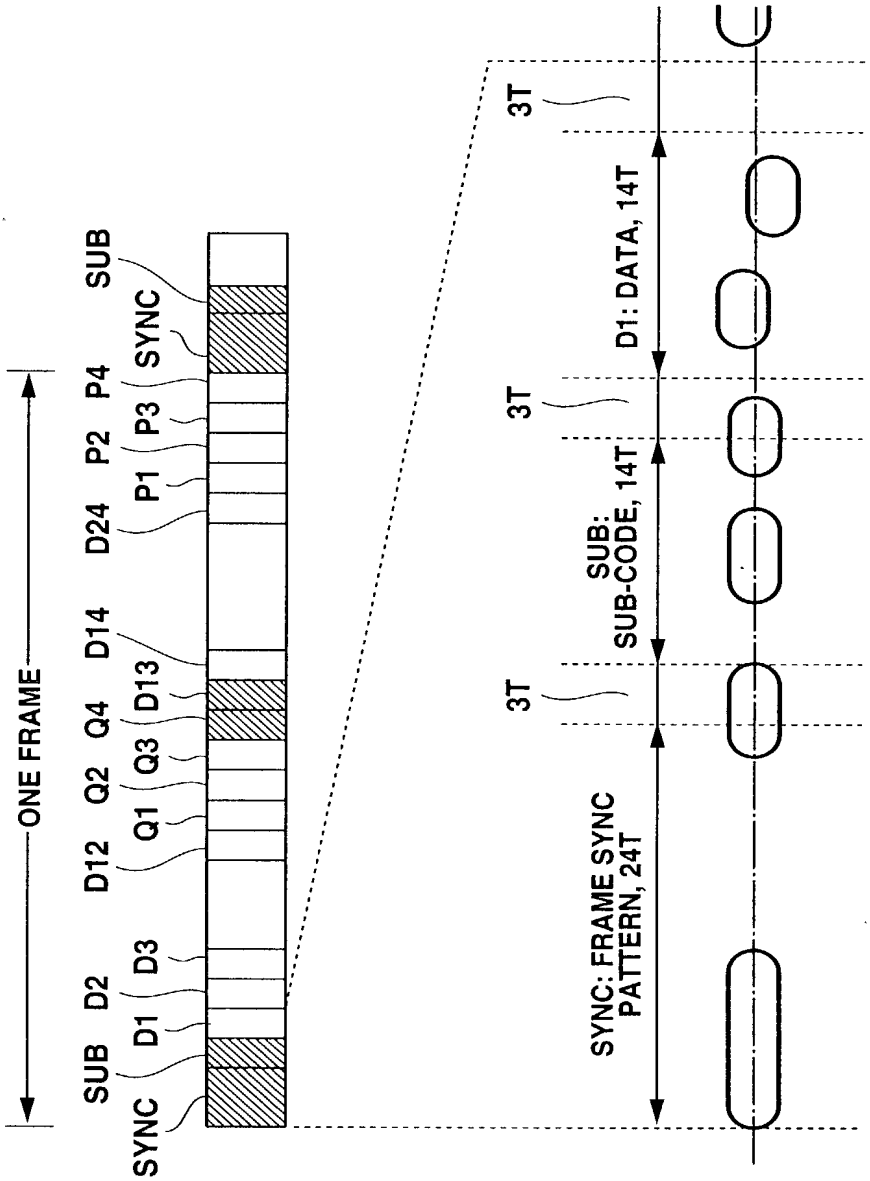
ONE FRAME
SUB
D2
D3
D12
Q2
Q4
D14
D24
P2
P4
SUB
SYNC
D1
Q1
Q3
D13
P1
P3
SYNC
3T
D1: DATA, 14T
3T
SUB:
SUB-CODE, 14T
3T
SYNC: FRAME SYNC
PATTERN, 24T

FIG.7

FIG.8A

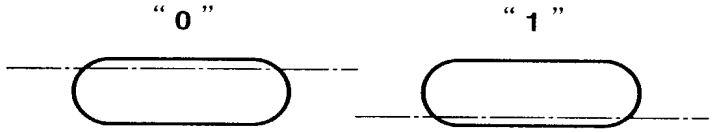

FIG.8B

DATA WORD (4BITS)	CODE WORD (5BITS)
0000	00101
0001	00110
0010	01001
0011	01010
0100	01011
0101	01100
0110	01101
0111	01110
1000	10001
1001	10010
1010	10011
1011	10100
1100	10101
1101	10110
1110	11001
1111	11010

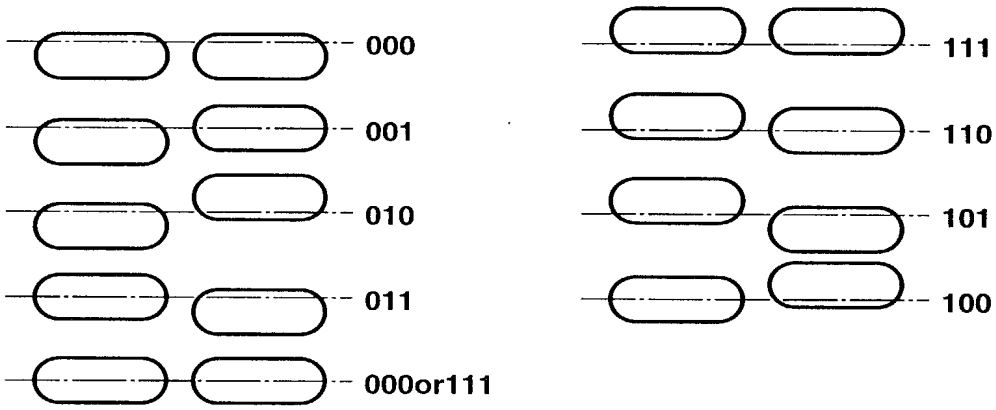

FIG.9

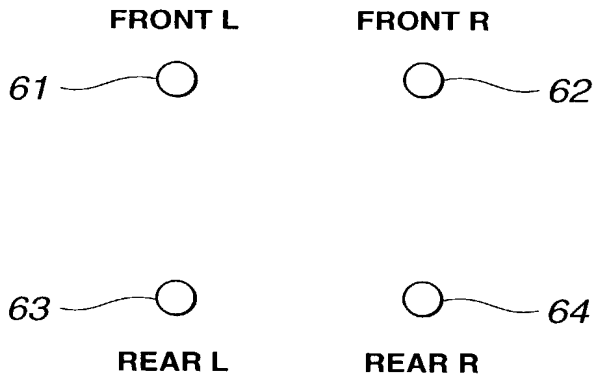

FIG.10

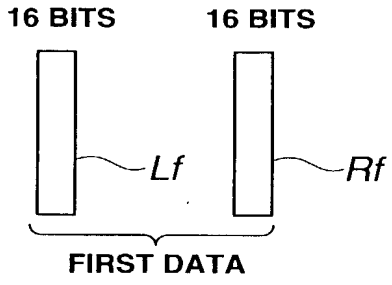

FIG.11A

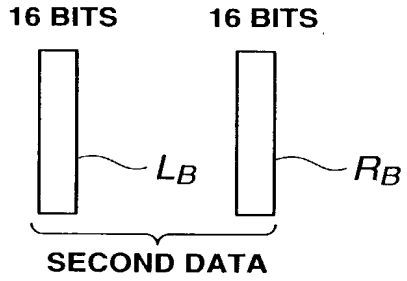

FIG.11B

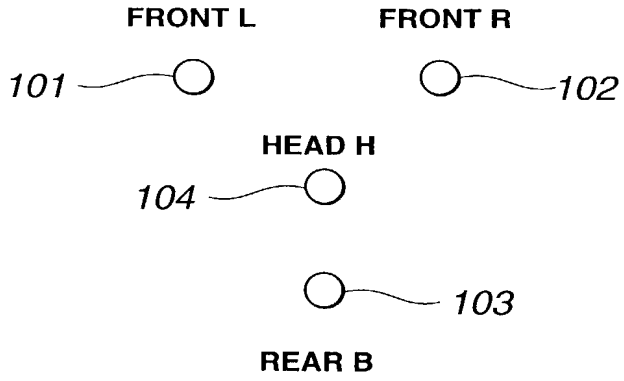

FIG.12

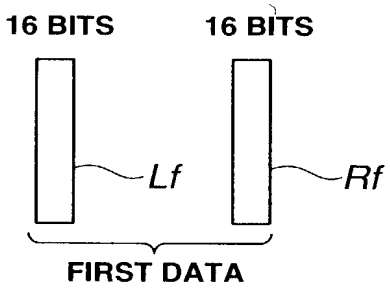

FIG.13A

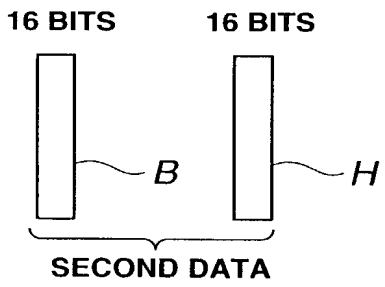

FIG.13B

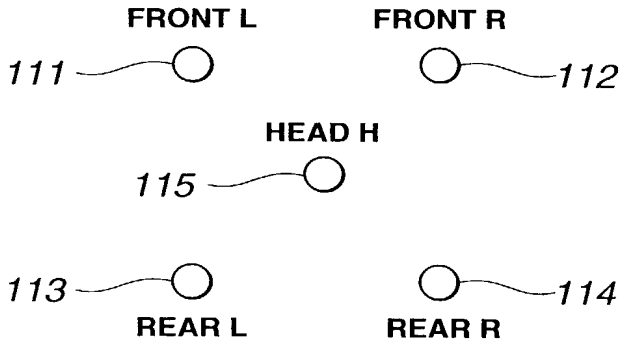

FIG.14

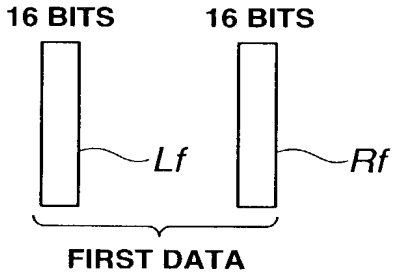

FIG.15A

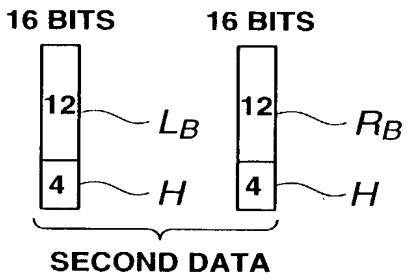

FIG.15B

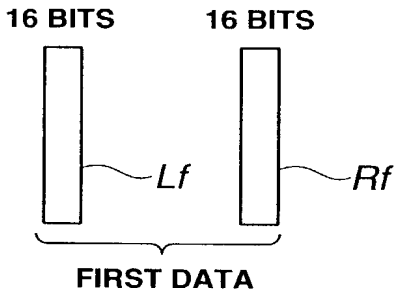

FIG.16A

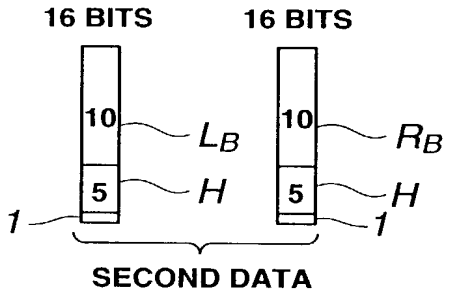

FIG.16B

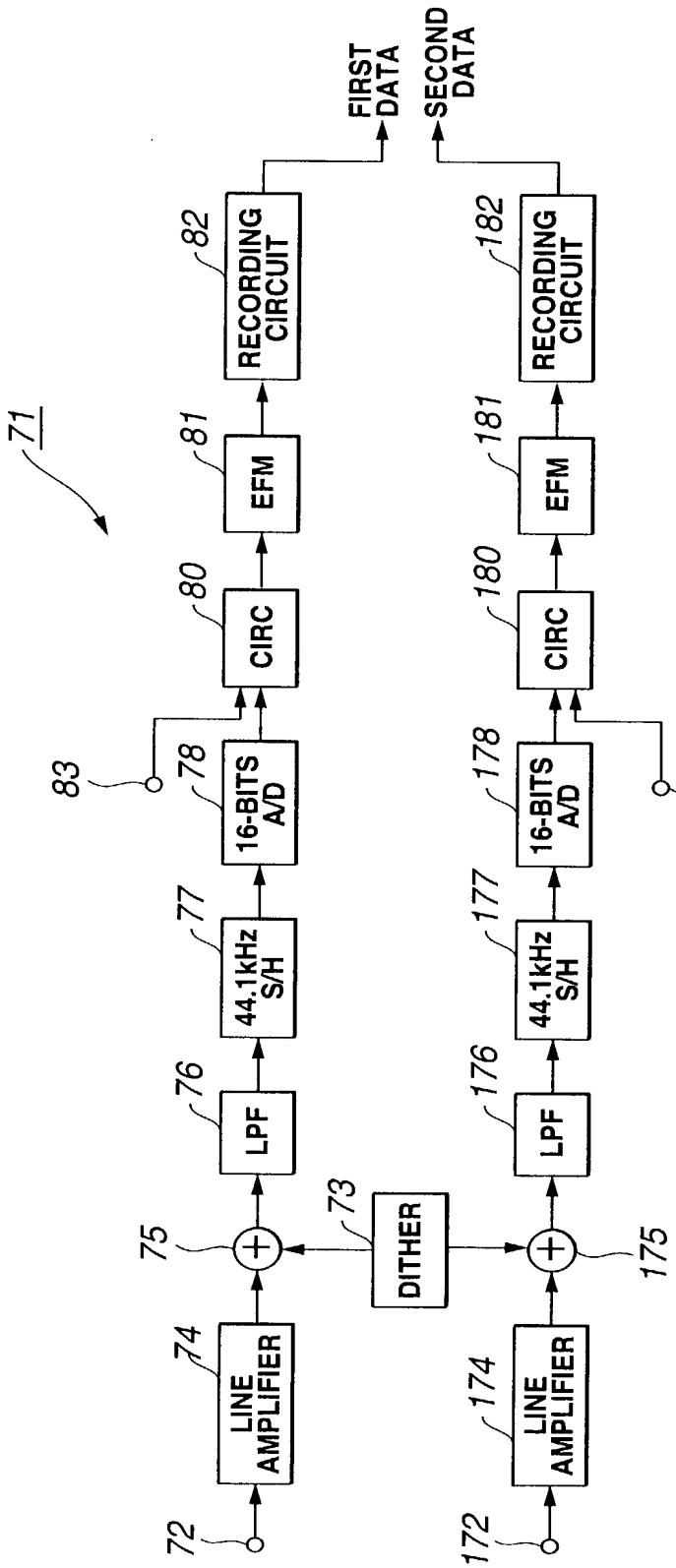
71
72
74
LINE AMPLIFIER
75
73
DITHER
76
LPF
77
44.1kHz S/H
78
16-BITS A/D
83
80
CIRC
81
EFM
82
RECORDING CIRCUIT
FIRST DATA
172
174
LINE AMPLIFIER
175
176
LPF
177
44.1kHz S/H
178
16-BITS A/D
184
180
CIRC
181
EFM
182
RECORDING CIRCUIT
SECOND DATA

FIG.17

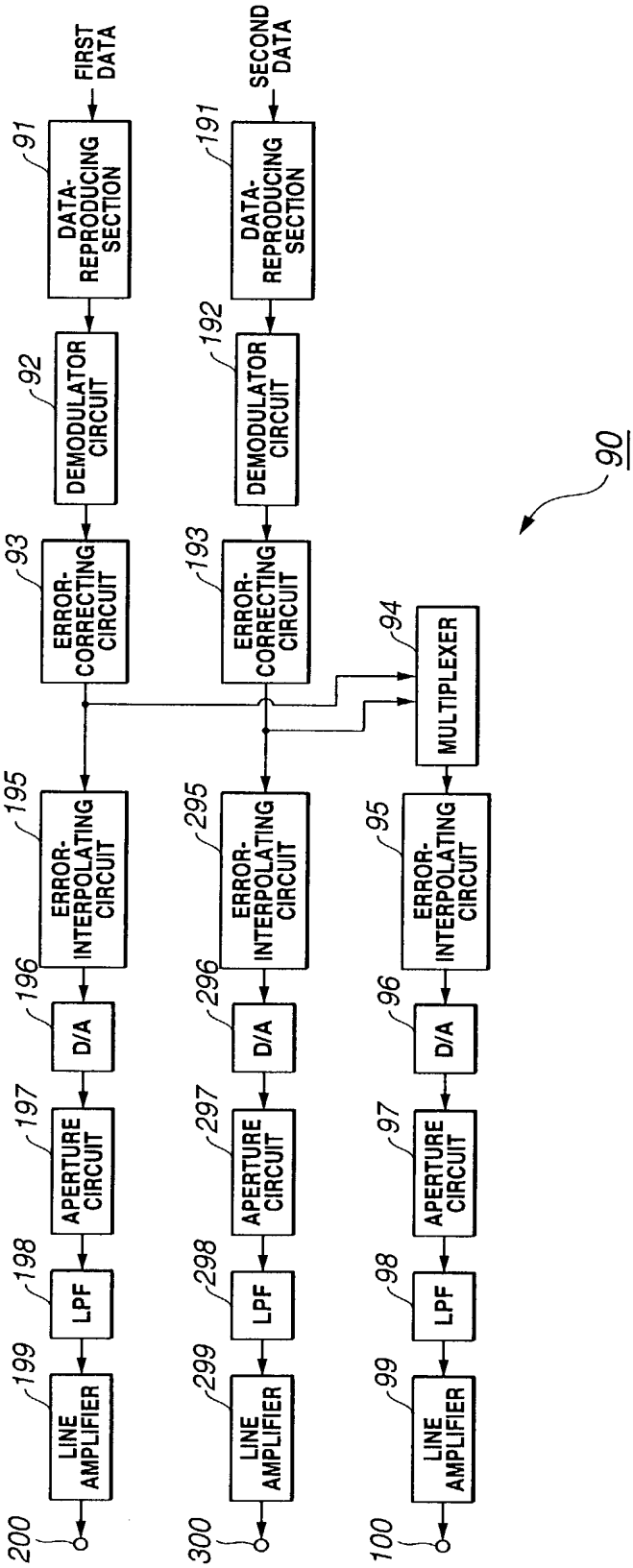
FIRST DATA
SECOND DATA
91
DATA-REPRODUCING SECTION
191
DATA-REPRODUCING SECTION
92
DEMODULATOR CIRCUIT
192
DEMODULATOR CIRCUIT
90
93
ERROR-CORRECTING CIRCUIT
193
ERROR-CORRECTING CIRCUIT
94
MULTIPLEXER
195
ERROR-INTERPOLATING CIRCUIT
295
ERROR-INTERPOLATING CIRCUIT
95
ERROR-INTERPOLATING CIRCUIT
196
D/A
296
D/A
96
D/A
197
APERTURE CIRCUIT
297
APERTURE CIRCUIT
97
APERTURE CIRCUIT
198
LPF
298
LPF
98
LPF
199
LINE AMPLIFIER
299
LINE AMPLIFIER
99
LINE AMPLIFIER
200
300
100

FIG.18